



# Temperature Controller

RE96/RE57/RE77



Measure



Control



Record



Analyze



### Compact Temperature Controller

RE57, RE77 & RE96 are specially designed for universal input measurement from RTD , Thermocouple , Linear input .  
The controller is equipped with Innovative smart PID & Dual display for PV & SP.

- ▼ Universal measuring input
- ▼ On/Off Control, PID Control
- ▼ Auto-Tuning Function
- ▼ Relay output or SSR output
- ▼ 4 digit Dual display
- ▼ Timer Function



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The controller is designed for the temperature control. Controller works directly with the resistance sensors or thermoelectric sensors or analog input. The controller is equipped with outputs that allow for control and alert signalization. Control output can be programmed for PID or ON/OFF algorithm.

### Applications:

- Plastics Industries
- Food Industries
- Dehydration Industries

### Product Features:

#### Programmable input temperature sensors:

- ▶ RTD : PT100(2 or 3 wire), Pt1000.
- ▶ Thermocouple: J,T,K,S,R,B,N,E.
- ▶ Analog Input(0/4-20mA,0-5/10V).

#### Configuration through:

- ▶ Front keys.

#### Measurement are available on:

- ▶ Dual 4 digit 7 segment display for PV & SP.

#### Control Output:

- ▶ Control Method : ON-OFF ,PID .
- ▶ Type of control output : Relay or SSR

#### Alarm Output:

- ▶ Different Alarm modes available.
- ▶ Type of alarm output : Relay or SSR.

#### Auto Tunning Function

- ▶ *Auto tuning of PID Parameters.*

#### Manual mode

- ▶ *Output can be controlled manually.*

#### Output on Failure

- ▶ User can set the value for safe operation of process on failure of input sensor

#### Input Digital filter

- ▶ The time constant of the filter can be set from 0 to 999.9sec.

#### Heating / Cooling control

- ▶ *Output can be configured as Heating or Cooling control.*

#### Timer Function

- ▶ Output can be configured for timer function.
- ▶ Timer output can be assigned to following functions
  - 1.Stop Control Output
  - 2.Switch to Manual Mode
  - 3.Start Auto Tunning
  - 4.Stop Auto tuning

#### Enclosure Protection for dust and water:

- ▶ Conforms to IP 54 for front face and IP 20 for terminal side as per IEC 60529.

#### Compliance to International Safety standards

- ▶ Compliance to International Safety standard IEC 61010-1- 2010.

#### EMC Compatibility

- ▶ Compliance to International standard IEC 61326.



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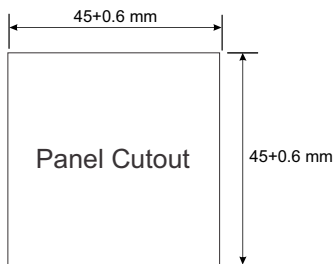
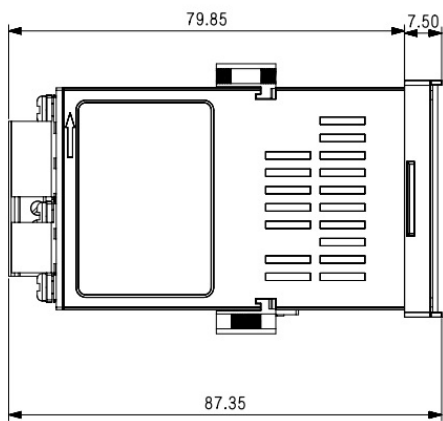
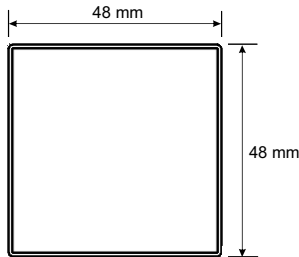


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# Temperature Controller

## RE96/RE57/RE77

### Dimensions Details RE 57 :



### Technical Specifications:

#### Input Signals:

Input type	Ranges	
Pt100	-200 ... 850°C	-328 ... 1562°F
Pt1000	-200 ... 850°C	-328 ... 1562°F
Fe-CuNi (J)	-100 ... 1200°C	-148 ... 2192°F
Cu-CuNi (T)	-100 ... 400°C	-148 ... 752°F
NiCr-NiAl (K)	-100 ... 1372°C	-148 ... 2501.6°F
PtRh10-Pt (S)	0 ... 1767°C	32 ... 3212.6°F
PtRh13-Pt (R)	0 ... 1767°C	32 ... 3212.6°F
PtRh30-PtRh6 (B)	0 ... 1767°C <sup>1)</sup>	32 ... 3212.6°F <sup>1)</sup>
NiCrSi-NiSi (N)	-100 ... 1300°C	-148 ... 2372°F
NiCr-CuNi (E)	-100... 1000 °C	-148 ... 1832°F
Current channels (I)	0 / 4 ... 20 mA	
Voltage channels (V)	0 ... 5 / 10 V	

<sup>1)</sup> Intrinsic error is related to measuring range: 200 ... 1767 °C (392 ... 3212.6 °F)

**Measurement time:** 0.2 sec

#### Auxiliary Supply:

Higher Aux	60 V – 280 V AC/DC	
Higher Aux supply frequency	45 to 65 Hz range	
Higher Aux Nominal Value	230 V AC/DC	50/60 Hz for AC Aux
	OR	
Lower Aux	20 V – 60V DC / 20 V – 40V AC	
Lower Aux supply frequency	45 to 65 Hz range	
Lower Aux Nominal Value	48 V DC / 24 V AC	50/60 Hz for AC Aux

#### VA Burden:

Auxiliary Supply burden < 6VA approx.

#### Types of outputs:

Relay contact	SPST-NO, rated load: 5 A/230 V
SSR drive output(optional)	5 V, maximum load capacity: 40 mA

#### Accuracy :

Reference Conditions	23°C
RTD	0.3% of range
Thermocouple	0.3% of range (0.5% of range - for B,R,S)
Analog input	0.2% of range ± 2 digit

#### Influence of Variations:

Temperature coefficient	
RTD	0.025% / Deg
Thermocouple	0.025% / Deg
Voltage	0.05% / Deg
Current	0.025% / Deg

#### Applicable Standards:

EMC immunity	IEC 61326 - 1 : 2012, Table 2*
Safety	IEC 61010-1-2010 , Permanently connected use
IP for water & dust	IEC60529
Pollution degree:	2
Installation category:	II

\*Note:- The instrument continues to operate at a measuring accuracy of within ± 2% of the range during test.



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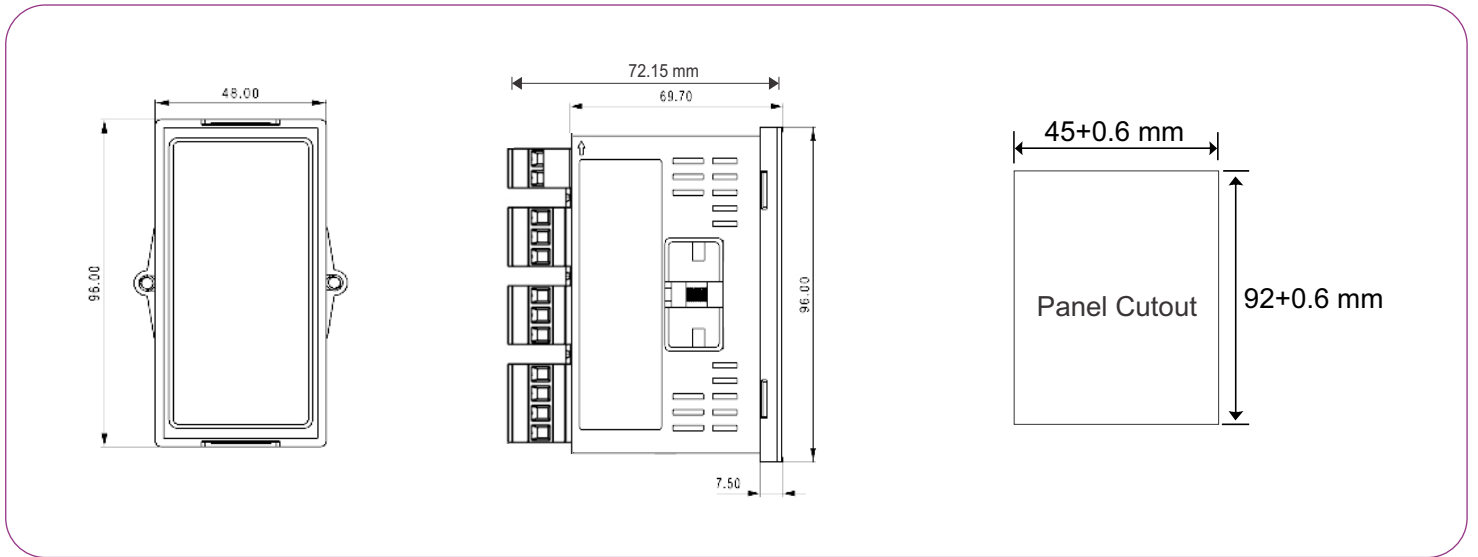


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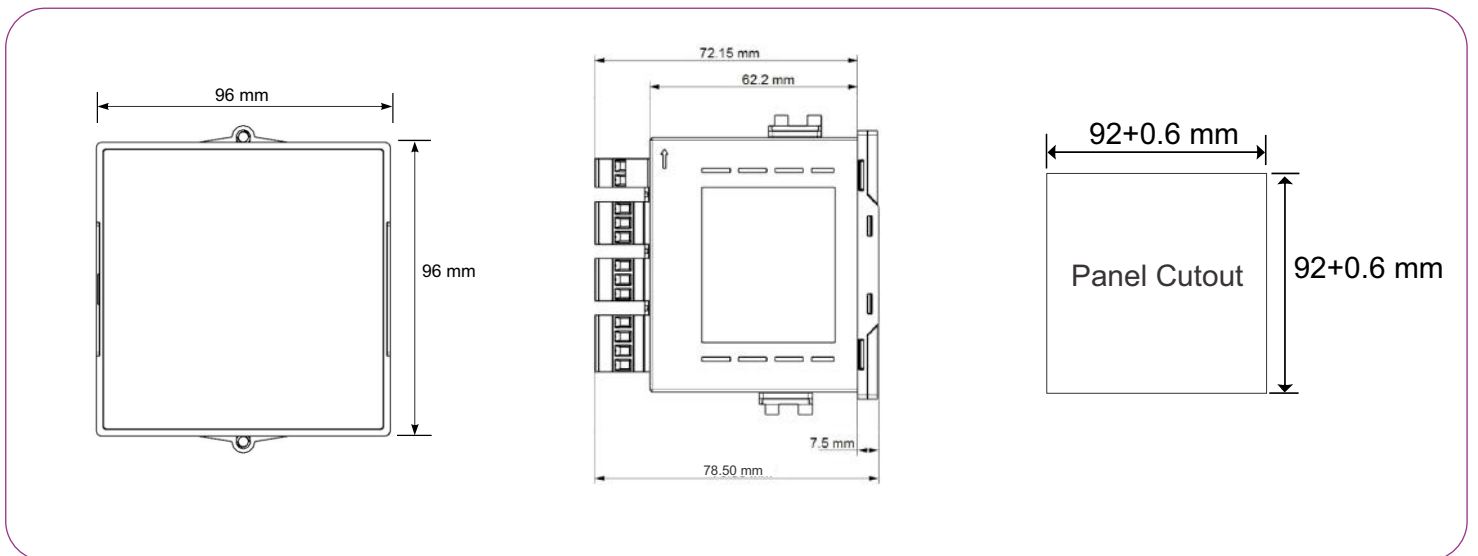


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### Dimensional Details RE 77 :



### Dimensional Details RE 96 :



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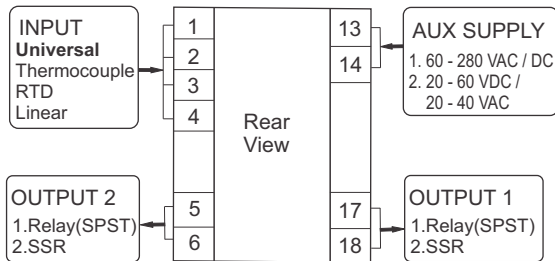


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### Main I/O Function



### Technical Specifications:

#### Isolation:

Protective Class	2
High Voltage Test	
Input+Output+Aux Vs Surface	2.2kV RMS, 50Hz, 1min
Input+SSR Output Vs Relay output	2.2kV RMS, 50Hz, 1min
Aux Vs Remaining circuit	2.2kV RMS, 50Hz, 1min

#### Environmental:

Operating temperature	-20 to +70°C
Storage temperature	-30 to +80°C
Relative humidity	0... 90%RH (non condensing)
Warm up time (Pre-conditioning)	20 minute
Shock (As per IEC60068-2-27)	Half sine wave, Peak acceleration 30g <sub>n</sub> (300 m/s <sup>2</sup> ), duration 18ms.
Vibration	10... 150...10 Hz, 0.15mm amplitude
Number of Sweep cycles	10 per axis
Enclosure front face	IP 54
terminal side	IP 20

Additional Error  
(Cold Junction Compensation for thermocouple)  $\leq 2^\circ\text{C}$

#### Dimensions and Weight:

##### RE 57

Bezel Size	48 mm X 48 mm DIN 43718
Panel Cut-out	45 + 0.6 mm X 45 + 0.6 mm
Weight	Approx. 0.3 Kg

##### RE 77

Bezel Size	48 mm X 96 mm DIN 43718
Panel Cut-out	45 + 0.6 mm X 92 + 0.6 mm
Weight	Approx. 0.35 Kg

##### RE 96

Bezel Size	96 mm X 96 mm DIN 43718
Panel Cut-out	92 + 0.6 mm X 92 + 0.6 mm
Weight	Approx. 0.6 Kg



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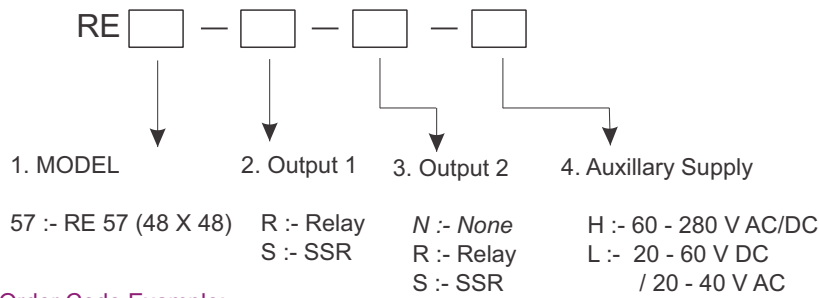


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### Ordering Information for RE 57 Series :

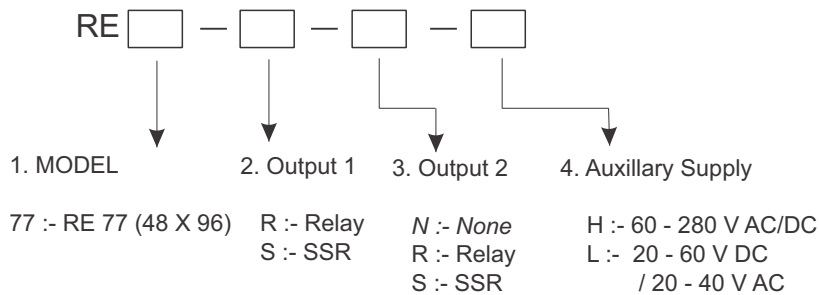


Order Code Example:

**RE 57 – R – S – H**

RE 57 temperature controller (48 X 48), Output 1 with Relay Output, Output 2 with SSR Output,, Auxillary supply (60V – 280V AC/DC).

### Ordering Information for RE 77 Series :

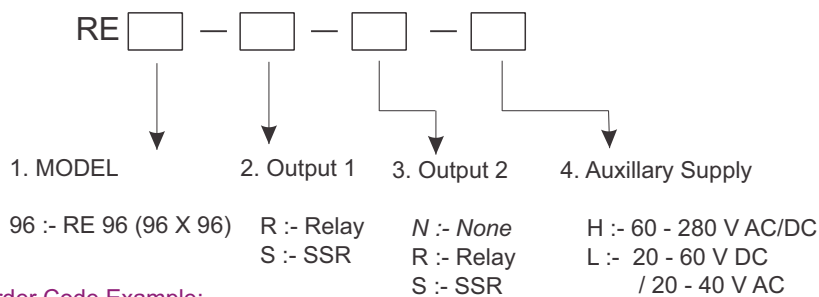


Order Code Example:

**RE 77 – R – S – H**

RE 77 temperature controller (48 X 96), Output 1 with Relay Output, Output 2 with SSR Output,, Auxillary supply (60V – 280V AC/DC).

### Ordering Information for RE 96 Series :



Order Code Example:

**RE 96 – R – S – H**

RE 96 temperature controller (96 X 96), Output 1 with Relay Output, Output 2 with SSR Output,, Auxillary supply (60V – 280V AC/DC).



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**RISHABH INSTRUMENTS PVT. LTD.**

Domestic (India): +91 253 2202028/99 | [marketing@rishabh.co.in](mailto:marketing@rishabh.co.in)

International: +91 253 2202004/06/08/99 | [global@rishabh.co.in](mailto:global@rishabh.co.in)

[www.rishabh.co.in](http://www.rishabh.co.in)